

as set forth below, the present comments are considered to be fully responsive to the present Office Action.

Sun describes a system which shares a few of the attributes of the present invention, and for this reason appears to be somewhat more relevant than the other three references primarily applied (and subsequently discarded) in the two previous Office Actions. For example, Sun does recognize the possibility of an ablation mechanism principally without heat transfer. However, Sun does not describe a system in which the applied pulses can be varied in pulse width from pulse-to-pulse, which is a key attribute of the present invention responsible for many of its unique advantages.

Claim 1 and many of the other independent claims specifically call for a dual pulse system where the second pulse is shorter than the first pulse and is in the picosecond pulselwidth regime (or shorter).

The Examiner repeatedly points to paragraph 71 of Sun as providing a teaching of varying the pulse width. However, the Examiner misinterprets this disclosure. Paragraph 71 of Sun describes changing the length, pulse shape and height of the *energy density profile* 50. This can be thought of as the entire “envelope” of the applied pulses as a whole. The energy density profile is taught to be changed by changing the height, the number and the distance between individual pulses 52. Conspicuously absent is a disclosure of varying the pulse width from pulse-to pulse. Indeed in most embodiments of Sun this would be impossible due to the fact that the multiple pulses are formed simply by splitting a single original pulse, without more.

Thus, in Sun, the temporal pulse width of each individual pulse is not changed. In the single laser technique of Sun, there is no mention of any method of changing the temporal length

of the pulses, as mentioned above. In the two-laser embodiment of Fig. 15, there is similarly no disclosure of employing pulses of differing width. In Fig. 16, the resultant pulses are all shown to have the same width, consistently with all other figures of the reference.

Further, with respect to the two laser embodiment, the lasers are described as being Q-switched.

The vast majority of Q-switched lasers have pulse widths around 30ns or above.

Applicants are not aware of any commercially available Q-switched lasers that produce picosecond regime pulses. This is of course specifically relevant with respect to those claims which require picosecond or shorter pulse widths, such as claim 1 and similarly worded claims.

The Examiner fails to address those claims such as claim 22 which includes the limitation...

wherein predetermined parameters of the first pulse are selected to induce a change in a selected property of the material, and predetermined parameters of the second pulse are selected based upon the property change induced by the first pulse

or other claims reciting variations on this theme. Presumably this is because the Examiner recognizes that Sun does not contemplate, disclose or suggest this concept. As mentioned in previous responses, Applicant's invention has the advantage of being able to tailor the pulses to produce desired effects in combination, with the second pulse interacting with the target in a different way owing to the "conditioning" imparted by the first pulse. As one example already mentioned in a prior response, the invention can use heat effects by adding controllable heating via one pulse to ablation via another pulse which is principally without heat. In contrast, each of

the pulses in Sun is described as simply removing a consistent layer of material, in the 1000's of angstroms range for transparent layers, and 100's of angstroms for metals. No variance in effect, or interdependence of the pulses, is disclosed.

The Examiner has now sequentially applied four prior art references against these claims, each of which is has been shown to be fundamentally deficient in teaching even the basic concepts embodied therein. Given the Examiner's formidable searching and analysis skills, this is an indication that these claims now warrant allowance.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

/Richard Turner/
Richard C. Turner
Registration No. 29,710

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